plurality of sequential loops of the air wound coil at the end of the air wound coil;

the wire is nearly pure copper; the wire is between .05 mm and 1 mm in diameter;

a space between each of the of sequential loops is between 1.1 and 20 times the diameter of the wire; and

a diameter of the each sequential loop is between 10 and 100 times the diameter of the wire.

16. (Amended) The package of claim 1 in which a space between each of the of sequential loops is between 2 and 10 times a diameter of the wire.

Remarks

Claims 1, 4-12, 15, and 16 are currently pending based on the amendment herein, wherein claims 1, 4-12, 15, and 16 have been amended herein.

The Examiner rejected claims 1, 4-12, 15 and 16 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner rejected claims 1, 4-12, 15 and 16 under 35 U.S.C. 103(a) as being unpatentable over Bernstein [US 4,866,573] in view of Huettliner [DE 3615307 A1].

Applicant respectfully traverses the §112 and §102 rejections with the following amendments and arguments.

35 U.S.C. §112

Claims 1, 4-12, 15 and 16 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner alleges that "[r]egarding claim 1, there lacks sufficient structure to support the functional language of "the coil extending between a plurality of **the for pick-up using a vacuum probe of a head of a pick-and-place machine**, and adapted for adjusting a position of the loops of the coils...after the coil is attached to a circuit board." There no antecedent basis for "the coils." In line 11, does applicant intend the "a circuit board" to be the same as "a circuit board" cited in line 4? Claims 4-12 and 15-16 inherit the defect of the parent claim. "

The Examiner alleges that "[r]egarding claim 4, there lacks sufficient structure to support the functional language of the surface includes a portion which **can be removed** from the wire coil."

The Examiner alleges that "[r]egarding claim 5, application should clarify what is intended by "the surface does not extend **between all** of the loops of the coil." There lacks sufficient structure to support the functional language of "...can be changed by bending the coil.""

The Examiner alleges that "[r]egarding claim 6, there lacks sufficient structure to support the functional language of "which the surface extends **can be easily bent** to adjust a position of the loops..."

The Examiner alleges that "[r]egarding claim 7, there lacks sufficient structure to support the functional language of "in which the surface is degraded by exposure to a solvent that can be used to wash the circuit board after the board is connected to the circuit board." The phrase

"whereby" is indefinite because it has been held that the functional "whereby" statement does not define any structure and accordingly can not serve to distinguish. *In re Mason*, 114 USPQ127, 44 CCPA 937 (1957). There lacks sufficient structure to support the functional language of "the loops **can be bent** to adjust a position of the loops..."

The Examiner alleges that "[r]egarding claim 8, there lacks sufficient structure to support the functional language of "the surface is degraded by exposing the surface to water and at least a portion of a material of the surface **can be removed by washing** in water..."

The Examiner alleges that "[r]egarding claim 9, there lacks sufficient structure to support the functional language of "there surface is degraded by heating the circuit board after which the separation between the loops **can be changed** by bending the loops..." There no antecedent basis for "the separation between the loops." "

The Examiner alleges that " [r]egarding claim 10, there lacks sufficient structure to support the functional language of "the material of the surface flows...so that after heating the circuit board to reflow the solder at least some of the loops become bendable..."

The Examiner alleges that "[r]egarding claim 11, there lacks sufficient structure to support the functional language of "the material of the surface sublimates...so that after reflow soldering the circuit board at least some of the loops become bendable..."

The Examiner alleges that "[r]egarding claim 12, there lack sufficient structure to support the functional language of "...so that it can be easily cut between the loops of the coil using a tool without... and then a position of the loops of the coil can be adjust..."

The Examiner alleges that "claim 15 lacks sufficient structure to support the functional language of the claimed method steps."

The Examiner alleges that "[r]egarding claim 16, applicant should clarify the spacing arrangement of "the coils."".

In response, Applicant has amended claims 1, 4-12, 15, and 16 to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

35 U.S.C. 103(a)

Claims 1, 4-12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernstein [US 4,866,573] in view of Huettliner [DE 3615307 A1].

The Examiner alleges that " [r]egarding Bernstein discloses a surface mounted electronic package comprising:

- a printed circuit board [15];

- a coil structure [1] including one or more coil of wire [2] bent into a plurality of sequential loops; and

- a plurality of terminals [3,4,5,6,7,8] for attaching the coil structure to the printed circuit board.

Bernstein discloses the instant claimed invention except for pick-up means.

Huettlinger discloses a surface mounted induction coil [10] comprising:

- a coil of wire bent into a plurality of sequential loops;

- terminals [12,13]; and

- a silicon layer [11] disposed on the top surface of the induction coil.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include a pick-up means on the coil structure of Bernstein, as suggested

by Huettlinger, for the purpose of facilitating manufacturing."

As to claim 1 as amended, Applicant respectfully contends that Bernstein and Huettliner do not individually or collectively teach or suggest each and every feature of claim 1. As a first example, Bernstein and Huettliner do not teach the feature of "an air wound coil comprising a wire bent into a plurality of sequential loops, wherein **an adjustable space** extends between each sequential loop " (emphasis added). Bernstein and Huettliner do not teach an air wound coil comprising a plurality of sequential loops with an **adjustable** space or gap existing between each of the sequential loops, as described by Applicant's claim 1. In contrast, Bernstein merely teaches a surface mounted coil and Huettliner merely teaches an induction coil that may be handled by an automatic mounting machine . Bernstein and Huettliner do not even mention an adjustable space or gap between sequential loops within a coil. Therefore, Applicant contends that Bernstein and Huettliner do not teach or suggest the preceding feature of claim 1.

As a second example, Bernstein and Huettliner do not teach the features of "placement means for placement and **tuning of the air wound coil**, said placement means including a first surface of a material connected to the air wound coil and a pick-and-place machine with a vacuum head for attachment to a second surface of the material, wherein the material is adapted to **adjust a position** of the plurality of sequential loops of the air wound coil for **tuning** the air wound coil, **after** the air wound coil is attached to the dielectric substrate." (Emphasis added). Bernstein and Huettliner do not even mention that a placements means for placing a coil on a substrate further comprises the ability to tuning the coil after placement on the substrate as described by Applicant's claim 1. Furthermore, Bernstein and Huettliner do not teach any adjustable coil, specifically a coil that is adjustable **after** the coil is attached to a substrate as

described by Applicant's claim 1. Therefore, Applicant contends that Bernstein and Huettliner do not teach the preceding features of claim 1. Therefore, Applicant contends that Bernstein and Huettliner do not teach or suggest the preceding feature of claim 1. Based on the preceding arguments, Applicant respectfully maintains that claim 1 is not unpatentable over Bernstein in view of Huettliner, and that claim 1 is in condition for allowance. Since claims 4-12 and 15-16 depend from claim 1, Applicant contends that claims 4-12 and 15-16 are likewise in condition for allowance.

Conclusion

Based on the preceding amendments and arguments, Applicant respectfully beleives that claims 1, 4-12, 15-16, and the entire application, are in condition for allowance and therefore request favorable action. However, should the Examiner believe anything further is necessary in order to place the application in better condition for allowance, or if the Examiner believes that a telephone interview would be advantageous to resolve the issues presented, the Examiner is invited to contact the Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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AMENDED MATERIAL

Claims 1, 4-12, and 15-16 are amended as follows:

1. (Twice amended) An electronic package, comprising:

[a coil of wire bent into a plurality of sequential loops;

terminals for attaching the coil to a circuit board; and

means including a surface of material connected to the coil extending between a plurality of the for pick-up using a vacuum probe of a head of a pick-and-place machine, and adapted for adjusting a position of the loops of the coils for tuning the coil, after the coil is attached to a circuit board.]

an air wound coil comprising a wire bent into a plurality of sequential loops, wherein an adjustable space extends between each sequential loop, and wherein the air wound coil does not comprise a core;

a plurality of terminals for attaching the air wound coil to a dielectric substrate;

placement means for placing and tuning of the air wound coil, said placement means including a first surface of a material connected to the air wound coil and a pick-and-place machine with a vacuum head for attachment to a second surface of the material, wherein the material is adapted to adjust a position of the plurality of sequential loops of the air wound coil for tuning the air wound coil, after the air wound coil is attached to the dielectric substrate.

4. (Twice amended) The package of claim 1 in which [the surface includes a portion which can be removed from the wire coil without damaging the wire coil, so that a position of the loops of the coil can be changed to tune the coil.] the first surface of the material includes a portion which

is removable from the air wound coil without damaging the air wound coil, so that the position of the plurality of sequential loops of the air wound coil can be changed to tune the air wound coil.

5. (Twice amended) The package of claim 1 in which [the surface does not extend between all of the loops of the coil so that a position of the loops, between which the surface does not extend, can be changed by bending the coil for tuning the coil.] the material does not extend over all of the plurality of sequential loops of the air wound coil so that the position of the plurality of sequential loops, over which the material does not extend, can be changed by bending the air wound coil for tuning the air wound coil.

6. (Twice amended) The package of claim 1 in which [the surface is sufficiently weak or flexible so that the loops between which the surface extends can be easily bent to adjust a position of the loops sufficient for tuning the coil without otherwise damaging the coil.] the material is a flexible material, and in which the flexible material is adapted to bend the plurality of sequential loops to adjust the position of the plurality of sequential loops for tuning the air wound coil without otherwise damaging the air wound coil.

7. (Twice amended) the package of claim 1 in which [the surface is degraded by exposure to a solvent that can be used to wash the circuit board after the package is connected to the circuit board, whereby the loops can be bent to adjust a position of the loops for tuning the coil.] the material is adapted to be degraded by exposure to a solvent used to wash the dielectric substrate after the air wound coil is connected to the dielectric substrate and in which the plurality of

sequential loops are bent to adjust the position of the plurality of sequential loops for tuning the air wound coil.

8. (Amended) The package of claim 7 in which [the surface is degraded by exposing the surface to water and at least a portion of a material of the surface can be removed by washing in water without damaging the coils.] the material is adapted to be degraded by exposing the material to water and at least a portion of the first surface of the material can be removed by exposing the first surface of the material to water.

9. (Amended) The package of claim 1 in which [the surface is degraded by heating the circuit board after which the separation between the loops can be changed by bending the loops for tuning the coil.] the material is adapted to be degraded by heating the dielectric substrate, and in which the air wound coil is tuned after the material is degraded.

10. (Twice amended) The package of claim 9 in which [the material of the surface flows when exposed to soldering temperature of eutectic Pb/Sn alloy, so that after heating the circuit board to reflow the solder at least some of the loops become bendable for tuning the coil.] the first surface of the material is adapted to flow when exposed to a soldering temperature of eutectic Pb/Sn alloy and in which at least one loop in the plurality of sequential loops is bendable for tuning the air wound coil after the first surface of the material flows.

11. (Twice amended) The package of claim 9 in which [the material of the surface sublimates when exposed to soldering temperature of eutectic Pb/Sn alloy, so that after reflow soldering the circuit board at least some of the loops become bendable for tuning the coil.] the first surface the material is adapted to sublimate when exposed to a soldering temperature of eutectic Pb/Sn alloy and in which at least one loop in the plurality of sequential loops is bendable for tuning the air wound coil after the first surface of the material sublimates.

12. (Twice amended) The package of claim 6 in which [the surface is sufficiently soft and arranged, so that it can be easily cut between loops of the coil using a tool without damaging the coil and then a position of the loops of the coil can be adjusted to tune the coil.] the material is adapted to be cut between each loop in the plurality of sequential loops of the air wound coil so that the position of at least one loop in the plurality of sequential loops can be adjusted to tune the air wound coil.

15. (Amended) The package of claim 1 in which:

[the surface includes a portion which can be removed from the wire coil without damaging the wire coil so that a spacing between the loops of the coil can be changed to tune the coil;

the surface does not extend onto some of the loops of the coil so that a position of the loops can be changed by bending the coil for tuning the coil;

the surface is sufficiently weak or flexible so that the loops on which the surface extends can be easily bent to adjust a position of the loops sufficient for tuning the coil without otherwise

damaging the coil;

the surface is degraded by exposure to a solvent that can be used to wash the circuit board after the package is connected to the circuit board whereby the loops can be bent for adjusting a position of the loops for tuning the coil;

the surface is degraded by exposing the surface to water and at least a portion of a material of the surface can be removed by washing in water without damaging the coils;

the surface is degraded by heating the circuit board after which the separation between the loops can be changed by bending the loops for tuning the coil;

the material of the surface flows when exposed to soldering temperature of eutectic Pb/Sn alloy so that after heating the circuit board to reflow the solder at least some of the coils become mechanically separable for tuning the coil;

the material of the surface sublimates when exposed to soldering temperature of eutectic Pb/Sn alloy so that after reflow soldering the circuit board at least some of the coils become mechanically separable for tuning the coil;

the surface is sufficiently soft and arranged so that it can be easily cut between loops of the coil using a tool without damaging the coil and then a position of the loops of the coil can be adjusted to tune the coil;

the material of the surface includes a water soluble material;

the terminals are strait sections of wire extending tangentially to the loops of wire at each end of the coil of wire;

the coil is an air coil without any core;

the wire is nearly pure copper;

the wire is between .05 mm and 1 mm in diameter;

the coils are spaced between 1.1 and 20 times the diameter of the wire; and

the diameter of the loops is between 10 and 100 times the diameter of the wire.]

the first surface of the material includes a portion which is removable from the air wound coil without damaging the air wound coil, so that the position of the plurality of sequential loops of the air wound coil can be changed to tune the air wound coil;

the material does not extend over all of the plurality of sequential loops of the air wound coil so that the position of the plurality of sequential loops, over which the material does not extend, can be changed by bending the air wound coil for tuning the air wound coil;

the material is a flexible material, and in which the flexible material is adapted to bend the plurality of sequential loops to adjust the position of the plurality of sequential loops for tuning the air wound coil without otherwise damaging the air wound coil;

the material is adapted to be degraded by exposure to a solvent ,wherein the solvent used to wash the dielectric substrate after the air wound coil is connected to the dielectric substrate, and wherein the plurality of sequential loops are bent to adjust the position of the plurality of sequential loops for tuning the air wound coil;

the material is adapted to be degraded by exposing the material to water and at least a portion of the first surface of the material can be removed by exposing the first surface of the material to water;

the material is adapted to be degraded by heating the dielectric substrate, and the air wound coil is tuned after the material is degraded;

the first surface of the material is adapted to flow when exposed to a soldering temperature of eutectic Pb/Sn alloy and in which at least one loop in the plurality of sequential loops is bendable for tuning the air wound coil after the first surface of the material flows;

the first surface the material is adapted to sublimate when exposed to a soldering temperature of eutectic Pb/Sn alloy and in which at least one loop in the plurality of sequential loops is bendable for tuning the air wound coil after the first surface of the material sublimates;

the material is adapted to be cut between the loop in the plurality of sequential loops of the air wound coil so that the position of at least one loop in the plurality of sequential loops of the loops of the air wound coil can be adjusted to tune the coil;

the material comprises a water soluble material;

the plurality of terminals comprise strait sections of the wire extending tangentially to the plurality of sequential loops of the air wound coil at the end of the air wound coil;

the wire is nearly pure copper; the wire is between .05 mm and 1 mm in diameter;

a space between each of the of sequential loops is between 1.1 and 20 times the diameter of the wire; and

a diameter of the each sequential loop is between 10 and 100 times the diameter of the wire.

16. (Amended) The package of claim 1 in which [the coils are spaced between 2 and 10 times the diameter of the wire.] a space between each of the of sequential loops is between 2 and 10 times a diameter of the wire.